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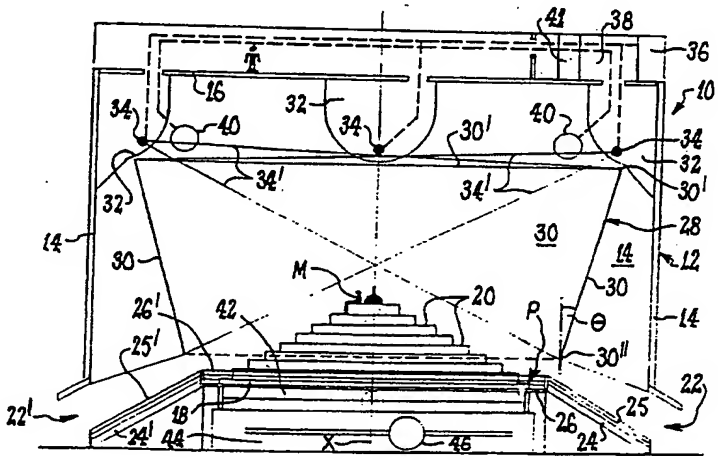

(57) Abstract

The cinematic theatre system (10) has a central, horizontally disposed platform (18) for accomodating members (M) of an audience, a screen structure (28) and a projector system for projecting cinematic film images onto the screen structure (28) so as to be viewable by the members (M) of the audience on the platform. The screen structure (28) extends upwardly above, and extends circumferentially around, the platform (18) and the platform is mounted on drive means (46) so as to be rotatable about a centrally disposed upwardly extending axis. The projector system comprises a plurality of angularly spaced projectors (34) each operable to project an image section onto a respective one of circumferentially adjacent screen sections (30) of the screen structure (28). The arrangement is such that with rotation of the platform (18) by drive means (46), and operation of projectors (34), members (M) of the audience are rotated with the platform (18), relative to the screen structure (28) and projectors (34), and are able to view image sections projected onto successive screen sections (30).

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CINEMATIC THEATRE SYSTEM

This invention relates to a cinematic theatre system and an entertainment or amusement method utilising such system.

In recent times, there has been a number of proposals for cinematic theatre systems attempting an illusory enhancement of image perception, intended to increase the involvement of members of a viewing audience in a cinematic programme. Such systems have endeavoured to achieve this by providing in combination with the experience of simply viewing a projected cinematic programme, further cues which add to the viewers' overall perception and, hence, sense of involvement. In relatively simple systems, the further cues have been auditory, relying on changes in sound sources and levels. Other systems have utilized motion cues by means of relative movement between members of the audience and the cinematic screen, such as by movement of seats occupied by the audience, or use of rotating and/or tilting base structures on which seating for the audience and/or the screen is mounted. Still other systems have used additional visual cues by means of part or fully circular, or dome shaped, screens over which the cinematic programme is projected. Combinations of these systems also have been proposed.

The previously proposed systems have been either of limited practical effect in enhancing viewer perception or involvement, or they have been extremely complex and/or expensive to install or operate. The present invention is directed to providing a system which produces excellent enhancement of viewer perception and involvement, and which is simple and relatively inexpensive to install and operate.

According to the present invention, there is provided a cinematic theatre system comprising a central, horizontally disposed platform for accommodating members of an audience thereon; a screen structure; and a projector system for projecting cinematic film images onto the screen structure so as to be viewable by the members of the audience accommodated on the platform; wherein the

screen structure extends upwardly above the platform and extends circumferentially around the platform; the platform is mounted on drive means by which it is rotatable about a centrally disposed upwardly extending axis; and the projector system comprises a plurality of angularly spaced projectors each operable to project an image section onto a respective one of circumferentially adjacent screen sections of the screen structure; the arrangement being such that with rotation of the platform by said drive means and operation of said projectors, members of the audience are rotated with the platform, relative to the screen structure and projectors, and are able to view image sections projected onto successive screen sections.

The platform, which most preferably is circular, may be provided with seating for the audience. While other arrangements are possible, the seating most preferably is arranged angularly around the platform, such as substantially concentrically around a central, vertical axis about which the platform is rotatable. With such angular seating arrangement, the seating in a first form is disposed such that members of an audience seated therein face outwardly away from the axis of rotation, directly towards the screen structure. However in an alternative, more preferred, second form, the seating is disposed such that members of an audience face inwardly towards the axis of rotation and across the far edge of the platform to the screen structure.

The upper surface of the platform can be substantially flat, with seating thereon at a substantially uniform level. However, it is preferred that this is not the case, but that the upper surface of the platform or the arrangement of seating thereon is in a tiered structure. Thus, in the above-mentioned first form for seating, the seating level is tiered downwardly towards the outer periphery of the platform. Similarly, in the preferred, second form for the seating, the seating level is tiered upwardly towards the outer periphery of the platform, somewhat in the manner of a coliseum.

Where seating is provided, it may comprise an

actual, individual seat for each member of the audience. However, particularly where the seating is tiered, in either of the above-mentioned first and second forms thereof, the seating may be defined by a tiered upper surface of the platform. Also, while the seating may be angularly disposed, such as concentrically, it need not be continuous around the axis of rotation of the platform, but may be in a plurality of angularly disposed seating blocks. Between successive ones of such seating blocks, access aisles preferably are provided.

The screen structure, as indicated, extends around the platform. The screen structure may be circular in plan view. However, for reasons which will become apparent from subsequent description, the screen structure preferably has the form of a substantially regular polygon in plan view, comprising a plurality of substantially planar screen sections in edge to edge relationship around the platform. In its polygonal form, the screen structure may be square, although it preferably is pentagonal, hexagonal or octagonal, with a hexagonal form being most highly preferred. Higher order polygonal forms can be used, but generally are suitable only for very large installations for the system of the invention.

The screen structure may extend substantially vertically. This is particularly suitable where a rear projection system, utilising projectors located externally around the screen structure, is provided. However, where a front projection system is provided, the screen stucture preferably are inclined upwardly and outwardly at a small angle, such as up to about 10° from the vertical. Where the screen structure is so inclined, it therefore is necessary that it is of slightly greater circumferential extent at its upper edge than at its lower edge. Thus, with a polygonal screen structure each screen section increases slightly in its horizontal extent to its upper edge, so that successive sections are in edge to edge contact over their full height.

With use of a front projection system, a respective projector is located forwardly and upwardly from each screen section, such as above the upper edge of the screen

structure. In one convenient arrangement, the projectors are mounted in a ceiling structure above the platform and screen structure, with the projections preferably concealed from members of the audience on the platform by light baffles adjacent projection portion in which the projectors are located. The projector for each screen section preferably is located beyond a portion of the screen structure located directly opposite its screen section. The location of each projector most preferably is such that the axis of its projection cone is substantially perpendicular to, and passes substantially through the centre of, its screen section.

With a rear projection system, it readily is possible for each projection cone axis to be perpendicular to and centered on its screen section. With a front projection system, this can not be so readily achieved without inclination of the screen sections as indicated, due to the need to locate each projector forwardly and above its screen section. However, such inclination enables each projection cone axis to be substantially perpendicular to its screen section, or at least sufficiently close to perpendicular for the required effect. Even where such perpendicular relation, or one sufficiently close thereto, is provided, the increasing circumferential extent of an inclined screen stucture, from its lower to its upper edge, necessitates the image projected on each screen section by its projector being correspondingly increased in width if, as is preferred, the image on each screen section is substantially continguous with the images on the adjacent screen sections.

The normal human field of view is about 135° horizontally, while this can be increased by about a further 110° with comfortable head turning action. In a conventional cinematic theatre with viewers in a static relationship to the screen, the viewers are confined to a substantially narrower field of view angle. However. with the arrangement of the theatre system of the invention, rotation of the platform relative to the stationary screen structure extending therearound, with an image projected

onto each screen section, encourages the viewers to utilize their full natural angle of view and to increase this to a comfortable extent by head turning action.

The images projected on successive screen sections preferably are contiguous. However, they additionally may be adjacent image sections of an image which is continuous around 360°. That is, the film projected by each projector of the theatre system preferably is produced simultaneously with the film projected by the other projectors. This necessitates, as a practical matter at least, filming all images simultaneously using a cluster of as many cameras as there are projectors and screen sections in the theatre system. The resultant continuity of the total 360° image, projected simultaneously onto each screen section as a respective image section, further encourages viewers to use their full angle of vision and to increase this by comfortable head turning action.

The effect of continuity of the total 360° image and rotation of the platform preferably is enhanced by further factors. The first two of these factors relate to the nature of the total image, and respectively provide a rotational effect and a translational effect. The third factor relates to control over the projection of the total 360° image. These factors, which can be utilised separately or in combination, now are briefly described in turn.

As indicated, each projector preferably provides an image section on its screen section, by utilising film produced in a respective camera of a camera cluster. In producing the films, the camera cluster preferably is rotated during at least part of the filming operation such that the field of view of each camera moves from one to that of the next. Thus, when the films are projected onto respective screen sections, the total 360° image is perceived as rotating relative to the screen structure during projection of that part of the image produced during rotation of the camera cluster. Thus, there is generated what is designated as a rotational effect produced by the total image.

The rotational effect is still achieved, but is less

pronounced, if there is no relative rotation between the platform and viewers on the one hand and the total 360° image as perceived on the other hand. There preferably is such relative rotation, while the benefit of the rotational effect is maximum when perceived rotation of the total image relative to the screen structure is in the opposite direction to rotation of the platform relative to that structure. While depending somewhat on the nature of the image content, such opposite rotation each at about one revolution per minute, generating rotation as perceived by viewers of two revolutions per minute, is found to be particularly suitable in optimising the rotational effect.

If the camera cluster is translated during filming, the consequence for each camera of course varies depending on its orientation relative to the direction of movement. Thus, for cameras facing in the direction of movement, the field of view moves in that direction, drawing the viewer with it. The converse applies to cameras facing away from the direction of movement, with viewers being drawn away from an initial field of view. Perceptions of such movement are conveyed by the total image as what can be referred to as a translational effect, with perception of the translational effect being enhanced by the 360° extent of the total image.

The term "translate" can be understood as simply designating horizontal movement. Thus, in the context of description of the translational effect, the term might be understood as indicating actual movement normal to the axis of rotation of the camera cluster or perceived movement normal to the axis of rotation of the platform. However, it is to be understood that such narrow meaning is not intended herein. Rather, the term is to be understood as also including actual or perceived movement vertically or a combination of horizontal and vertical movement. Additionally, it is to be understood that the axis about which the camera cluster is rotatable need not be in a constant orientation, such as vertical. The orientation of that axis can be constant or variable during any stage of filming, with corresponding

consequences for perceived movement in the projected image.

The cameras of the camera cluster are operated simultaneously, with the resultant film images consequently being produced in synchronism. A lack of synchronisation between successive image sections projected onto adjacent screen sections clearly could detract from the desired overall effect. Thus, the projectors of the theatre system most preferably are mechanically interlocked and driven in unison by a master drive system. Synchronised operation of all projectors therefore is achieved such that the image sections they generate are in synchronism with each other and provide a unified, coherent total image, achieving the above-mentioned third factor of image control.

The theatre system of the invention, particularly where utilising film for each projector which produces a coherent total 360° image, substantially enhances viewers perception of the image, and action or movement depicted therein. At a first level, this enhancement results from rotation of the platform relative to the screen structure. Viewers perceive the rotation, although the impression tends to be one of the screen structure, rather than the platform, rotating. Such perception is heightened if any lighting visible during a programme, such as exit signs, is located on and rotates with the platform, and this is preferred.

Where the total image also is perceived as rotating relative to the screen structure, perception that the screen structure actually is moving is further heightened. This effect is greater where the screen structure is of the above-described polygonal form, as there then is a relatively clearly discernible frame of reference in relation to which perceived rotation of the total image can be observed. The frame of reference is provided by the junctions between mutually inclined adjacent screen sections and the resultant effect of the image being perceived as moving from the plane of one screen section to that of the next screen section in the direction of perceived image rotation. Moreover, it is found that perceived rotation of the image sections from

one screen section to the next, with a resultant change in image plane, does not detract from the overall effect, particularly where the perceived image rotation is at an appropriate level of up to a few revolutions per minute. Rather, due to rotation of the platform, the change of plane is able to introduce a pleasing or interesting additional effect.

Somewhat similar effects are achieved with variation in the image resulting from translation or tilting of the camera cluster during production of the film for each projector. Where there is variation in the image due to one or other of these factors, the variation in combination with perceptions due to rotation of the platform tend to create an impression of actual relative translation or tilting between the viewers and the image. Such impression will be understood as being similar to that able to be created in the mind of viewers in a conventional cinematic theatre in which they are in a static relationship to the screen. However, in combination with rotation of the platform and, in particular, with perceived rotation of the total image, the impression is stronger and integrated in the minds of the viewers as an overall effect.

It is difficult to explain the overall impact of perceptions created by the relatively simple form of the theatre system of the invention. However, the impact is pronounced. If, for example, the films for the projectors are of a harbour scene of a major city, with the films produced from a camera cluster suspended below a helicopter, the total 360° image of course is of such scene and, if viewed without any actual or perceived rotational effect, it will be attractive in itself. However, with such films produced during rotation of the camera cluster, travel of the helicopter, changes in inclination of the helicopter during such rotation and/or travel, and various combinations of these movements, a dramatic effect is achieved when the total image is viewed with rotation of the platform. The impression is of the theatre system comprising a rotating viewing chamber which is perceived as travelling, and from which the viewers are

able to view an actual environment above which they are moving. Similar effects also can be achieved where the imagery for example is of animals in a game park, of being in a yacht race, or of exploring a sub-sea level coral reef and its inhabitants. In each case, the overall impression is of looking out from a chamber into actual imagery.

The visual impact provided by the theatre system is pronounced, with that which is perceived readily being taken to be actual. This preferably is further enhanced by an appropriate sound system. The sound system may be such that a respective speaker system is associated with each screen section to provide speakers operable to generate sound appropriate for the image being projected onto its screen section. Each speaker system preferably has directional speakers, while all speaker systems may be actuated by a common multi-track replay machine operable to vary the sound level and content from speakers of a given speaker system, and between speaker systems, such that the sound tracks the perceived rotation of the total image. Such tracking most preferably is in synchronism with the image content projected on each screen section, and varies with such image content.

The replay machine most preferably is interlocked to the projection system. In one particularly suitable arrangement, each speaker unit has or comprises at least one speaker mounted in a ceiling structure above the platform, with each ceiling mounted speaker directing its sound to a target area on the respective screen section, such that the sound is reflected back to the audience and appears to emanate from the target area.

The drive means for the system preferably provides for substantially silent rotation of the platform. In general, relatively slow rotation, of the order of one revolution per minute or up to a few revolutions per minute, such as about four revolutions per minute, will be appropriate. At least at such rates of revolution, a single, slow-revving hydraulic motor will suffice, although other arrangements are possible.

Most preferably, the platform is rotatable on a

centrally disposed, substantially vertical shaft mounted on a basal structure. Preferably the shaft projects upwardly from a subframe mounted in or on the basal structure, while jacking bolts or the like may enable height and/or axis adjustment of the shaft. Coupling between the platform and the shaft preferably is by means of a "slew-ring" bearing, although other arrangements can be used.

The platform may be rotatable on a plurality of angularly spaced rollers or wheels rotatable against an annular track. The wheels preferably are fixed on the basal structure, or on a support structure thereon, with the track mounted on the underside of the platform; although the converse arrangement can be used. The number of wheels and the spacing of the wheels and track radially from the axis of the shaft can vary, depending on the size and weight of the platform, and the design requirements for load balance. However, if required, there may be two concentric tracks (not necessarily in a common plane) and a respective plurality of wheels rotatable against each track.

For the or each track there preferably is a plurality of freely rotatable wheels and at least one driven wheel. In each case, each wheel may include a sub-frame by which it is mounted, and on which a hub for the wheel is mounted. In the case of a driven wheel, the hub preferably is rotatable by an associated direct-drive hydraulic wheel-motor which is mounted on its sub-frame.

Each wheel preferably is of metal, such as steel, but has a bonded rubber tyre thereon. However, in such cases, the wheel rim may be provided with a metal ring around its outer circumference which has a radial width slightly less than and matched to that of the tyre, so as to limit tyre flex and reduce flat spot formation. The tyre preferably is of solid, natural or synthetic rubber compound. The tyre preferably has a relatively high hardness, such as of about 85 Duro hardness, in the case of freely rotatable wheels, to provide minimum rolling resistance. The driven wheels preferably have tyres of lesser hardness, such as of about 70 Duro hardness to

maximise traction with the track. Preferably the track is of metal, such as of steel.

For long tyre service life and quiet operation, each wheel may have a rim and tyre assembly which is conical in profile, matching its track circumference. The tyres preferably are bonded to the wheel rim, such as by a vulcanising process. After bonding, the tyre may be ground to achieve a required degree of true running concentricity. The respective sub-frame by which the hub of each wheel is mounted preferably has adjustment means allowing for minor camber and toe in/out adjustment.

The platform may be of modular construction, enabling its component parts to be demounted. Where the seating thereon is of one or other of the above-described tiered forms, the platform preferably is of a corresponding conical or frusto-conical form. Thus, the platform may have a central hub-region, from which a plurality of support spars extend in a frusto-conical array; with the spars being restrained by cross-bracing, and/or by seat or floor joists mounted thereon, and/or by the track when mounted on the underside of the platform.

Below, or remote from the platform, there is drive means such as an hydraulic pump for actuating the motor of each driven wheel. In one example, the platform may be rotatable on about 24 substantially equally spaced wheels, of which about three are driven wheels. The one drive means can provide power for each of the driven wheels. However, alternatively, a respective drive means can be provided for each driven wheel, to minimise risk of a total system failure and to increase load carrying capacity. With respective drive means, there preferably is a proportional pump controller, such as one using a pressure priority H.P. control curve, to control torque or acceleration, and assist in overcoming "breakaway friction".

In order that the invention may be more readily understood, description now is directed to the accompanying drawings, in which:

Figure 1 is a schematic plan view of a system according to the invention;

Figure 2 is a vertical sectional view taken on line II-II of Figure 1;

Figure 3 corresponds to Figure 1, but shows an alternative embodiment of the invention;

Figure 4 is a partial perspective view of the system of Figure 3;

Figure 5 is partial sectional view of a platform suitable for the system of Figures 3 and 4; and

Figure 6 illustrates a wheel arrangement for rotation of the platform of Figure 5.

Figures 1 and 2 illustrate a theatre system 10, having an outer building enclosure 12 comprising side walls 14 and roof structure 16. Within structure 12, there is a centrally disposed platform 18 rotatable about vertical axis X, and on which tiered seating 20 is arranged. One member of a viewing audience able to be accommodated on seating 20 is shown at M, to provide an indication of possible overall scale.

Platform 18 has a circular outer periphery P and may, for example, be about 16 metres in diameter. Seating 20 thereon extends angularly and substantially concentrically around and faces radially outwardly from, axis X. Seating 20 is tiered upwardly from periphery P of platform 18, towards axis X. Enclosure 12 has an entrance 22 in one wall 14, from which stairs 24 rise to decking 26 around platform 18, to enable members of an audience to approach platform 18 and the seating 20 thereon. The members of the audience are able to depart via stairs 24', down to exit 22' in the opposite wall 14. Stairs 24,24' have side hand rails 25,25', while a protective rail 26' extends around annular decking 26 which surrounds periphery P of platform 18.

Within enclosure 12, a cinematic screen structure 28 extends around, and above, the outer periphery of decking 26. Structure 28 is square in plan view, and has four screen sections 30 in edge to edge contact at corners 31. While each section 30 has a substantially planar viewing face directed towards axis X, it is inclined upwardly and outwardly at a small angle θ to the vertical. Thus, in order that structure 28 be continuous, with successive

sections 30 thereof being in edge to edge contact, each section 30 has a slightly greater horizontal width at its upper edge 30', compared with that at its lower edge 30".

Substantially centrally above each screen section 30, there is a respective enclosure 32, housing a projector 34 for the directly opposite screen section 30. Projectors 34 are concealed from members of an audience on seating 20, by its enclosure 32 and suitably positioned light-baffles (not shown). Each projector 34 may for example be a 70mm Ballantyne Super Pro Projector, and each is positioned so that the axis of its projection cone 34' is centered on and normal to the viewing surface of the opposed screen section 30. Also, all projectors 34 are interlocked and driven in synchronism by a master drive system 36 in control room 38.

At locations above each screen section 30, there are mounted speakers 40 of a sound system driven by a replay machine 41, such as a Magnatech machine, interlocked with projectors 34 via system 36. At least some speakers 40 are directional, such that their output is directed towards the opposed screen section 30 and reflected back to the area of seating 20.

Platform 18, and seating 20 thereon, is rotatable on bearing support 42 on basal support 44. Drive for platform 18 is provided by motor 46, with a preferred arrangement for this being as described below with reference to Figures 5 and 6.

In the more preferred embodiment of Figures 3 and 4, corresponding parts of the theatre system 110 are identified by the same reference numeral as for system 10, plus 100.

In Figures 3 and 4, a first principal difference is that screen structure 128 is hexagonal in plan view. There accordingly are six screen sections 130, with a corresponding increase in the number of projectors 134 and speakers (not shown for simplicity of illustration).

Also, in Figures 3 and 4, seating 120, shown schematically in Figure 3 but omitted from Figure 4 for ease of illustration, preferably is tiered in the manner shown in Figure 5. That is, while the seating again

extends around the vertical axis of platform 118, the seating 120 is tiered downwardly from the outer periphery of platform 118, towards a central region thereof. Seating 120 is not circumferentially continuous, but is broken to define at least one access aisle 121.

With further reference to Figure 5, the platform 118, shown partially in transverse section, is formed of radial framework members 160 which define a circular central part, and similar members 162 which extend radially outwardly and upwardly from members 160. Successive members 160 are secured by elongate cross-bracing members 164 extending therebetween, while members 162 are similarly secured by elongate cross-bracing members 166 extending therebetween. The central part of platform 118, above members 160, is covered by decking 168, while above members 162 there is mounted the seating 120. Members 162 are further strengthened by framework 170 of seating 120, with the latter being completed by panelling 172.

Platform 118 is mounted on a central "slew-ring" bearing and shaft assembly 174. In this arrangement, shaft 176 of assembly 174 projects upwardly from a subframe 178 cast in basal structure 180. Bearing 182 of assembly 174 enables rotation of platform 118 on shaft 176.

Intermediate the ends of members 162 of platform 118, there is provided box section segments 184 around which a continuous track 186 is secured, while wheels 188 rotatable against track 186 are mounted on raised annular portion 180a of basal structure 180. The track and wheel arrangement is shown in more detail in Figure 6, which illustrates a driven wheel 188. The wheel 188 has a steel subframe 190 adjustably mounted on portion 180a of structure 180 by jacking bolts 191. Plate 190a of subframe 190, carries a direct drive hydraulic wheel-motor 192 on which wheel 188 is drivably mounted. Wheel 188 has a bonded rubber tyre of two axially spaced parts 188a,b with metal runner 188c of wheel 188 extending between parts 188a,b. The radial extent of runner 188c is less than that of tyre parts 188a,b, as shown at the lower part of wheel 188, to limit the extent of compression of the

tyre under load.

Platform 118 may have about 24 wheels spaced uniformly around annular basal support portion 180a, of which three of the wheels are as shown in Figures 5 and 6. The other wheels may be similar in overall form, except that they have a freely rotatable hub, rather than a motor 192, carried by plate 190a. A respective hydraulic pump (not shown) is provided for driving the motor 192 of each of the driven wheels.

Platform 18 of Figures 1 and 2 may be of a conical form which is the inverse of that for platform 118. A similar central shaft and track/wheel arrangement again can be used.

Use of system 10 of Figures 1 and 2, and system 110 of Figures 3 to 6, will be apparent from the foregoing general description. However, platform 18,118 is rotated in a selected direction on the axis of a central support (such as shaft 176 of Figure 5), preferably after general lighting within the system has been dimmed just prior to commencement of a cinematic programme. The members of an audience accommodated on seating 20,120 therefore are rotated within screen structure 28,128, with any remaining general lighting such as aisle lights and exit signs preferably rotating with platform 18,118. The rotation is smooth and silent, with any motor noise being insulated from the audience, and such that any visual or motion cues are ambiguous and do not make apparent whether it is platform 18,118 or screen structure 28,128 which is rotating.

Projectors 34,134 and speakers 40 (and their equivalent in Figures 3 and 4) then are actuated; with projectors 34,134 generating a total 360° image continuous around screen structure 28,128. With the image appropriately produced using a cluster of cameras, the total image is able to appear to rotate around structure 28,128, preferably in the opposite direction, but at substantially the same rate as rotation of platform 18,118. This creates the impression of screen structure 28,128 rotating at about twice the rate of actual rotation of platform 18,118, but with opposite direction, with an

overall impression of the entire system floating. Also, with variation in the projected image, due to translation and/or tilting of the camera cluster during filming, the entire system creates the impression of being a vehicle encircled by glass panels, which is gliding in similar movement in a real environment corresponding to the projected total image. Directional perceptions of such movement are heightened by variation in sound direction in accordance with variation in the total image around screen structure 28,128.

Finally, it is to be understood that various alterations, modifications and/or additions may be introduced into the constructions and arrangements of parts previously described without departing from the spirit or ambit of the invention.

CLAIMS:

1. A cinematic theatre system comprising a central, horizontally disposed platform for accommodating members of an audience thereon; a screen structure; and a projector system for projecting cinematic film images onto the screen structure so as to be viewable by the members of the audience accommodated on the platform; wherein the screen structure extends upwardly above the platform and extends circumferentially around the platform; the platform is mounted on drive means by which it is rotatable about a centrally disposed upwardly extending axis; and the projector system comprises a plurality of angularly spaced projectors each operable to project an image section onto a respective one of circumferentially adjacent screen sections of the screen structure; the arrangement being such that with rotation of the platform by said drive means and operation of said projectors, members of the audience are rotated with the platform, relative to the screen structure and projectors, and are able to view image sections projected onto successive screen sections.

2. A system according to claim 1, wherein the platform is circular.

3. A system according to claim 1 or claim 2, wherein seating for the audience is provided on the platform.

4. The system according to claim 3, wherein the seating is arranged angularly around a central, substantially vertrical said axis about which the platform is rotatable.

5. The system according to claim 3 or claim 4, wherein the seating is arranged such that the audience faces radially with respect to said axis.

6. The system according to claim 5, wherein the seating is radially tiered and increases in height towards said axis, with the seating arranged such that the audience faces radially outwardly away from said axis.

7. The system according to claim 5, wherein the seating is radially tiered and increases in height away from said axis, with the seating arranged such that the audience faces radially inwardly towards and beyond said axis.

8. The system according to claim 6 or claim 7, wherein said seating is defined by a tiered upper surface of the platform.

9. The system according to any one of claims 1 to 8, wherein the screen structure is substantially circular in plan view.

10. The system according to any one of claims 1 to 8, wherein the screen structure is of substantially regular polygonal form in plan view, and comprises at least four substantially planar screen sections of which successive screen sections circumferentially around the platform are in edge to edge contacting relationship at respective upwardly extending side edges thereof.

11. The system according to claim 10, wherein said screen structure has at least five said screen sections.

12. The system according to claim 10 or claim 11, wherein said screen structure is inclined upwardly and outwardly at a small angle to the vertical, with each screen section having a slightly greater horizontal extent at an upper edge thereof than at a lower edge thereof such that successive said screen sections are in edge to edge contact over substantially the full height thereof.

13. The system according to any one of claims 1 to 12, wherein said projector system is adapted for front projection, and each projector is located forwardly and upwardly from the respective screen section on which its image section is projectable.

14. The system of claim 13, wherein each projector is mounted above the screen structure at a location opposite the respective screen section.

15. The system of claim 13 or claim 14, wherein each projector is mounted in a structure such that it is concealed from members of the audience on the platform.

16. The system of any one of claims 1 to 15, wherein the projectors are arranged such that successive image sections are contiguous such that the projector system enables projection of a total projected image which is continuous around the screen structure.

17. The system of claim 16, wherein each projector projects an image section from film having an image

content produced simultaneously with that of film of each other projector, such that the total projected image is of a total 360° filmed image.

18. The system of claim 17, wherein the image content of each film is produced using a camera cluster which is rotated during at least part of a filming operation such that, during operation of the projector system, the total image is perceived as rotating relative to the screen structure.

19. The system of claim 18, wherein the image content is such that the perceived rotation of the total image is in a direction opposite to the direction of rotation of the platform.

20. The system of claim 18 or claim 19, wherein the image content of each film is produced while the camera cluster is translated in at least one of a horizontal and a vertical direction in at least part of the filming operation such that, during operation of the projector system, such translational movement is perceived in viewing of the total image.

21. The system of any one of claims 18 to 20, wherein the image content of each film is produced while the camera cluster is tilted with respect to an axis thereof during at least part of the filming operation such that, during operation of the projector system, resultant tilting movement is perceived in viewing of the total image.

22. The system of any one of claims 1 to 21, further including a master drive system operable to mechanically interlock and drive in unison the projectors of the projector system.

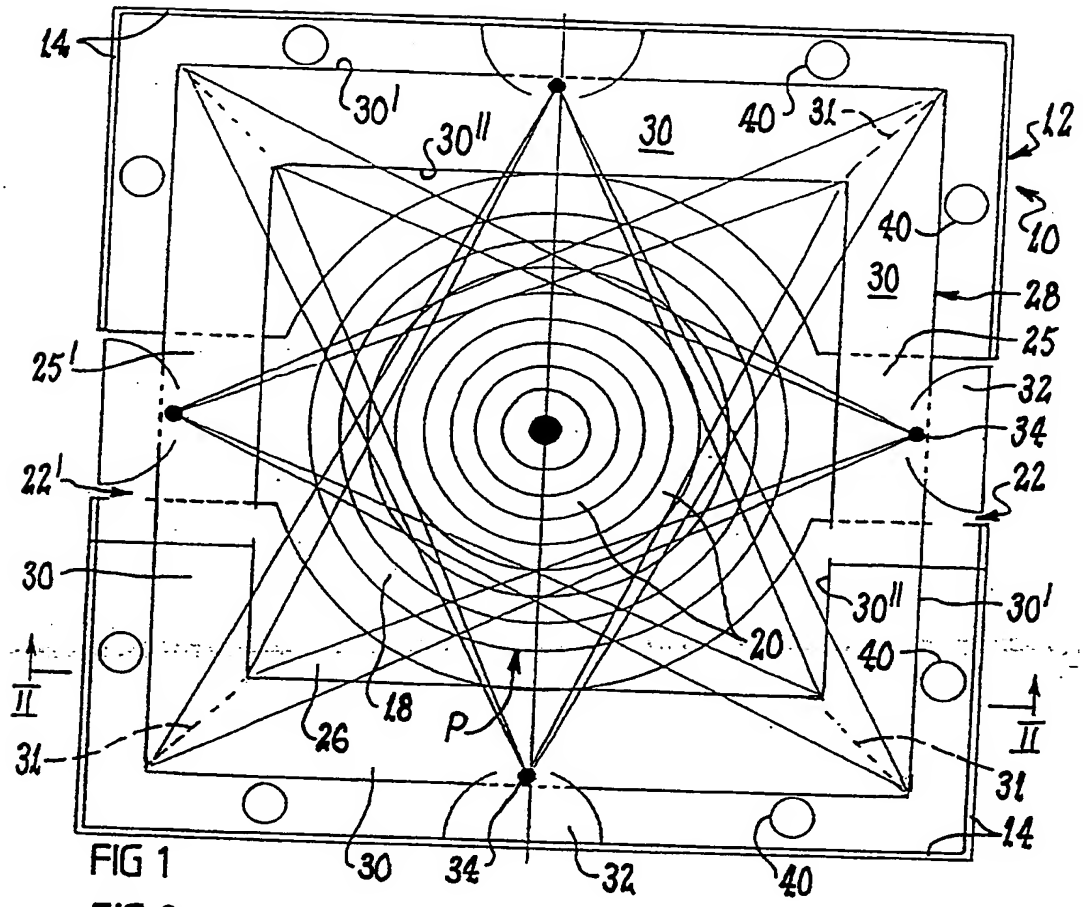
23. The system of any one of claims 1 to 22, further including a sound system having a respective speaker system for each screen section, each speaker system comprising at least one directional speaker, each speaker system being actuated by a common multi-track replay machine operable to vary the sound content and level between speaker systems in accordance with the image content projected on each screen section.

24. The system of claim 22 as appended to any one of

claims 18 to 21, further including a sound system having a respective speaker system for each screen section, each speaker system comprising at least one directional speaker, each speaker system being actuated by a common multi-track replay machine operable to vary the sound content and level between speaker systems in accordance with the image content projected on each screen section; and wherein said replay machine is interlocked with the projector system.

25. The system of any one of claims 1 to 24, wherein said drive means by which the platform is rotatable comprises at least one slow-revving motor operable to rotate the platform at a rate of the order of one to four revolutions per minute.

26. The system of any one of claims 1 to 24, wherein said drive means by which the platform is rotatable comprises a plurality of angularly spaced rollers or wheels below the platform, with at least one of said rollers or wheels being a drive member by which rotational drive is imparted to the platform, others of said rollers or wheels being driven with rotation of said platform.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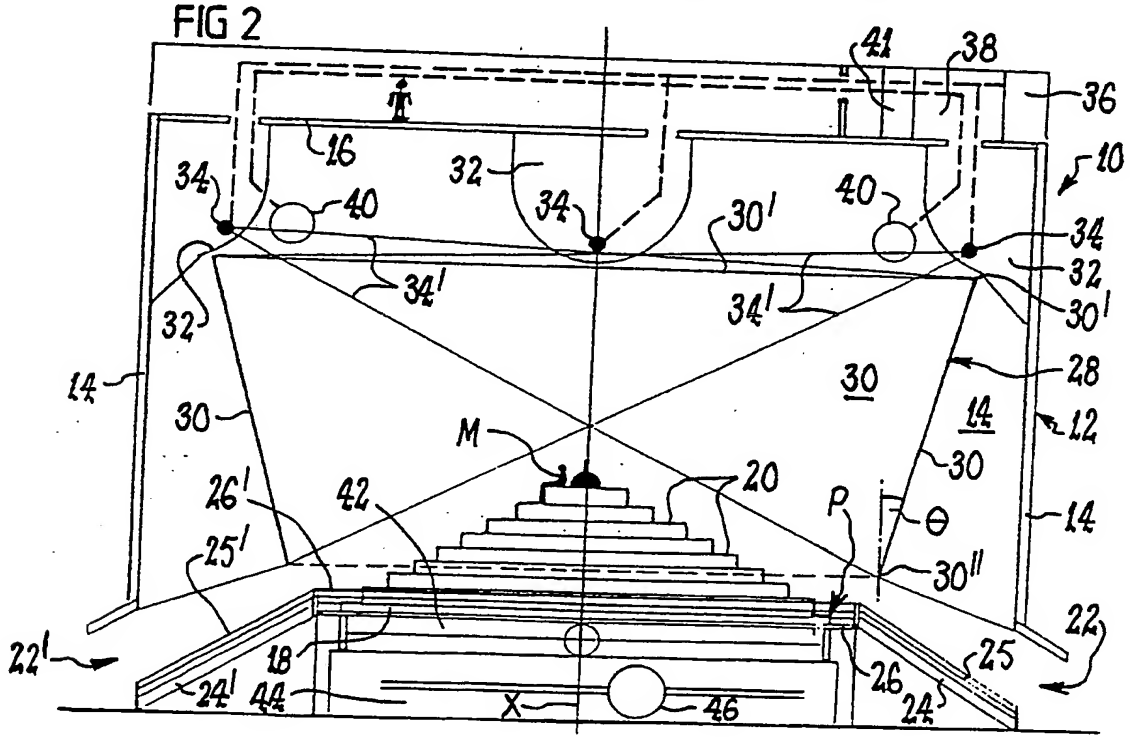
30''
30
40
31
12
10
28
25
32
34
22
25'
22'
30
II
31
26
18
P
20
40
30''
30'
14

FIG 1

FIG 2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36
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30'
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22'
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44
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46
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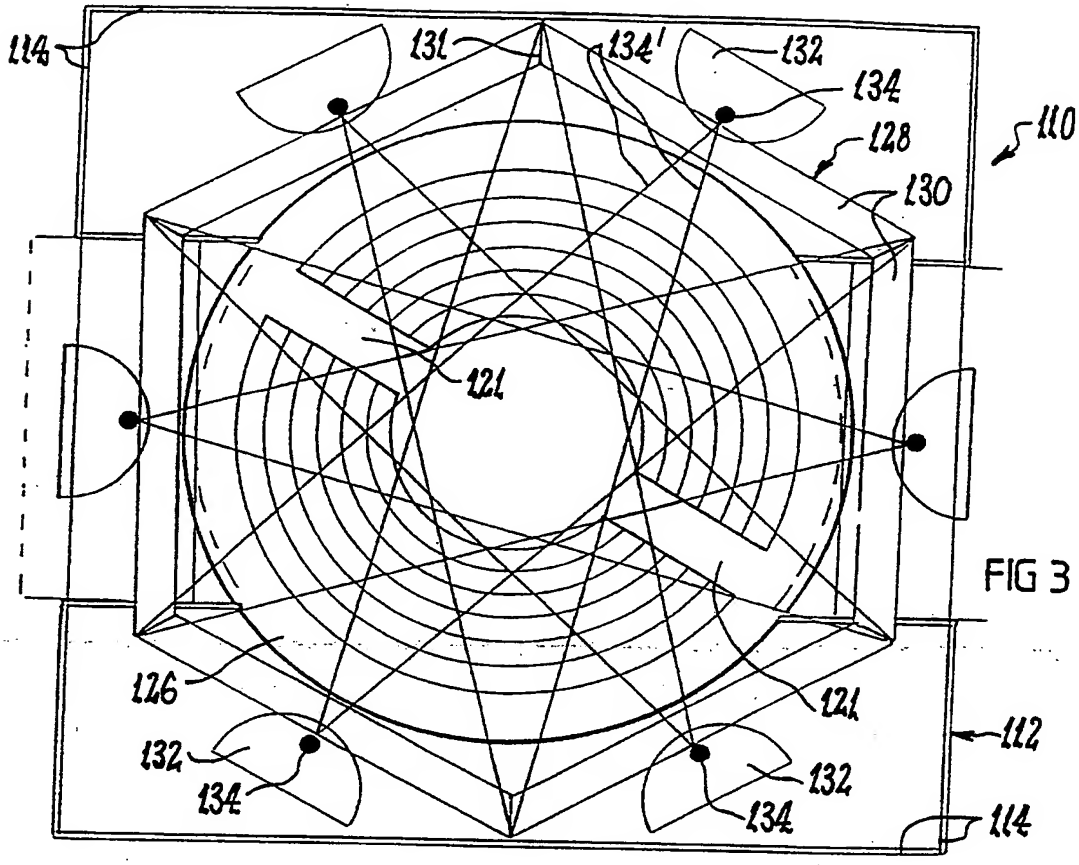
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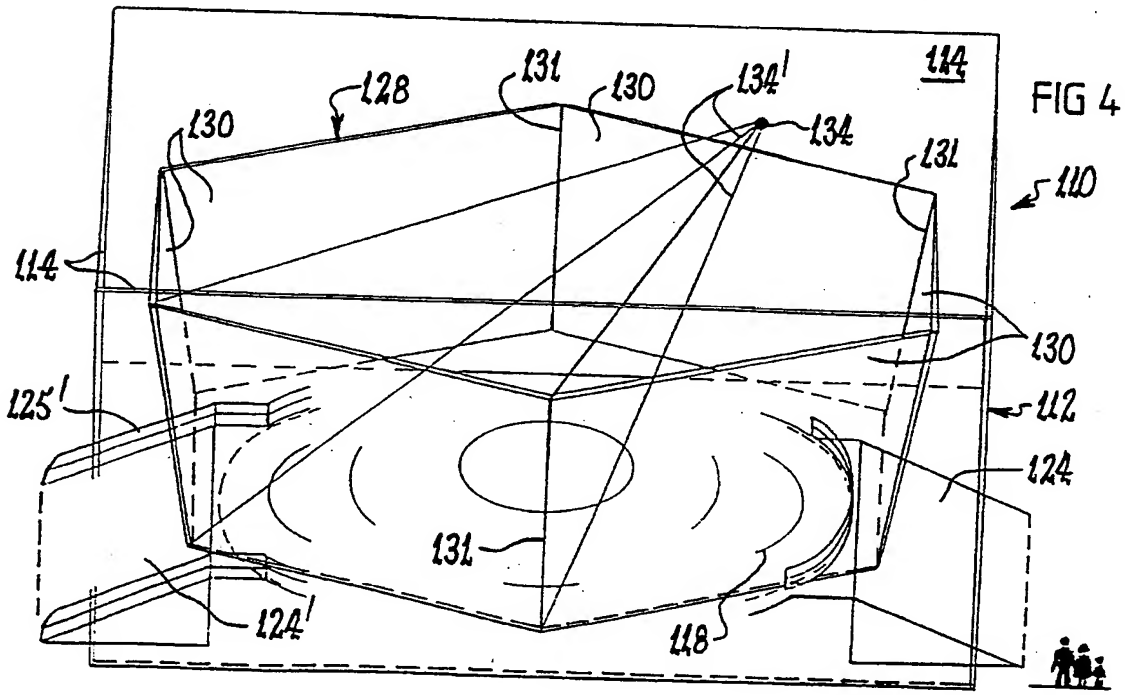
132
134
114

FIG 3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134'
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125'
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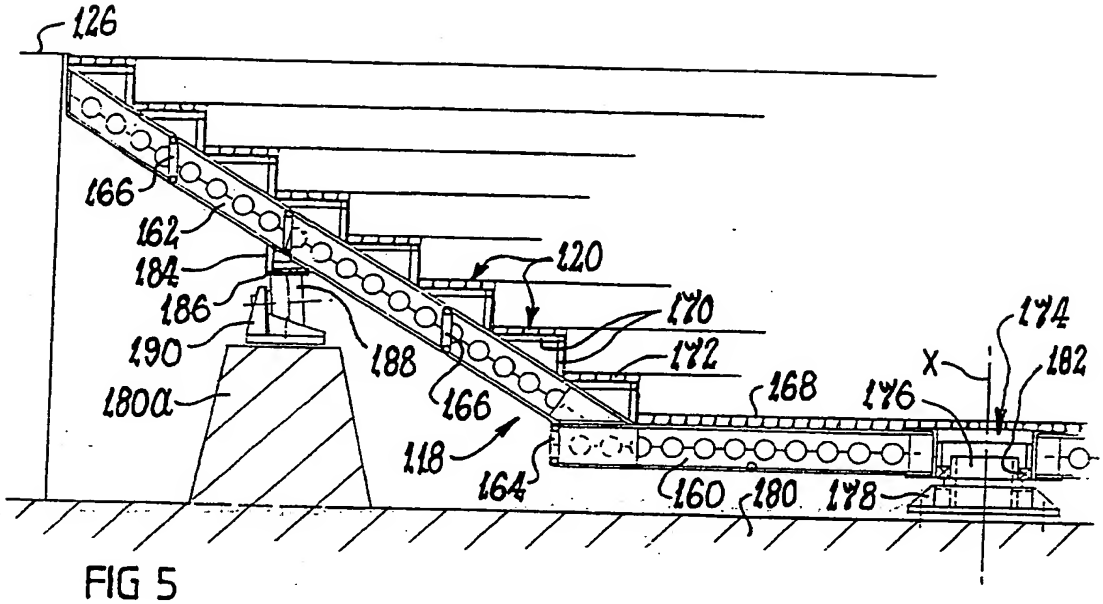
131
124'
118

FIG 4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162
184
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180a
188
166
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164
120
170
172
168
176
X
174
182
160
180
178

FIG 5

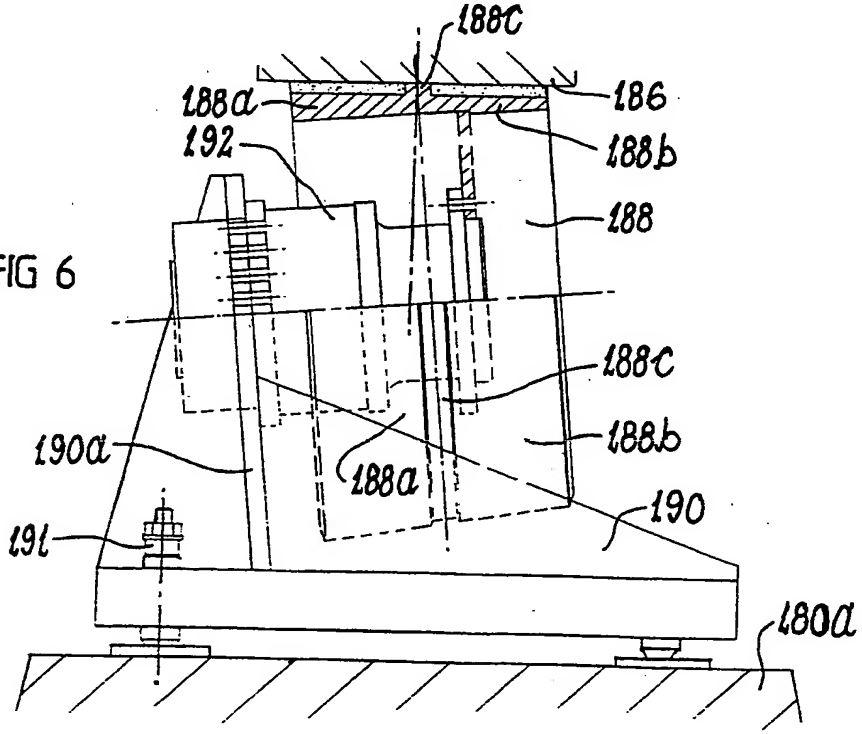
188C
188a
186
192
188b
188
188C
188b
190a
188a
190
191
180a

FIG 6

INTERNATIONAL SEARCH REPORT

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all)[6]

According to International Patent classification (IPC) or to both National Classification and IPC

Int. Cl.[5] E04H 3/30

II. FIELDS SEARCHED

Minimum Documentation Searched [7]

Classification System	Classification Symbols
IPC	E04H 3/22 to 3/30

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched [8]

AU : IPC as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

Category*	Citation of Document, [11] with indication, where appropriate of the relevant passages [12]	Relevant to Claim No [13]
A	AU,B, 50660/73 (468082) (TAX) 4 July 1974 (04.07.74)	
X,Y	AU,B, 44611/85 (578956) (CONCORDE ST. GEORGE PRODUCTIONS PTY LTD) 9 January 1986 (09.01.86) See page 3 lines 8-22, page 5 line 22 - page 6 line 6	(1-9,25,26)
A	GB,A, 2209546 (WUU) 17 May 1989 (17.05.89)	
Y	US,A, 2700798 (PERROTTET) 1 February 1955 (01.02.55) (EQUIVALENTS : FR 1031584, FR 1204643, DE 867746, GB 677383, CH 277215, CH 298018) See column 1 line 46	(1-4)

* Special categories of cited documents : [10]

"A" Document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior t the international filing date but later than the priority date claimed

"T" Later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
17 September 1991 (17.09.91)	24 September 91
International Searching Authority	**Signature of Authorized Officer**
AUSTRALIAN PATENT OFFICE	D.R. LUM

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON INTERNATIONAL APPLICATION NO. PCT/AU 91/00293

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report	Patent Family Member
GB 2209546	US 4885878
AU 44611/85	CA 1244621, DE 3523635, FR 2567035, GB 2162762, US 4642945

END OF ANNEX